

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Luda Voskov, P.G.
Remediation Division, Superfund Section

Date: November 11, 2010

From: Charles D. Stone, P.G., P.E.
Remediation Division, Technical Support Section

Subject: Technical Review: *Revised Draft Groundwater Study Sampling and Analysis Plan: San Jacinto River Waste Pits Superfund Site*, November 2010

Per request, a technical review of the subject report was performed for the purpose of evaluating the proposed sampling plan for the Study Area in support of groundwater monitoring and sampling activities.

The subject report incorporates the land area south of IH-10 into the Plan. This area had not been addressed in previous submittals.

Sec A Site Hydrogeology:

- A.1 Typo: pg 10 – “... section 1.4.1.3 ...” should read “... section 1.4.1.7”
- A.2 Figure 2: not referenced in text.
- A.3 Figure 3: incorporate data from waste pits to indicate distribution of impounded wastes.
- A.4 Sec 1.4.1.7: the statement quoted from ASTDR regarding CCD leachability and their propensity to “... *bind strongly to soil* ...” making them unlikely “... *to leach to underlying groundwater* ...” refers to CCDs in vadose zone soils that are subject to leaching by infiltrating precipitation. However, in the case of the impoundments, the CCDs appear to be in the saturated zone already (see Item A.3) and are subject to aqueous partitioning. Equilibrium partitioning will result in a finite groundwater CCD concentration. The question is: “What are the predicted concentrations?”

Sec B Chemicals of Potential Concern:

- B.1 Sec 1.5: The selection of groundwater COPCs is predicated upon sediment analyses. However, based on information in subject report, the relationship of the impoundment groundwater and the sediment cannot be discerned (see Item A.3). Are these units juxtaposed? If so: in what way? What is the physical connection by which sediment results predicate the groundwater COPC selection?

- B.2 Sec 1.5: What is rationale for not sampling VOCs in groundwater from northern impoundments?
- B.3 Sec 1.5: What is the physical relationship between the groundwater in southern impoundment area and the (analyzed) sediment? (See also Item B.1.)

Sec C Data Gaps:

- C.1 Sec 1.6: The TCEQ acknowledges the current lack of information regarding the hydraulic interconnectivity between impoundment groundwater and surface water.

Sec D Task Description:

- D.1 Sec 1.7: The TCEQ acknowledges that, at a minimum, the intent of tasks to be completed under the subject plan shall include an assessment of the interconnectivity between impoundment groundwater and surface water (see Item C.1).

Sec E Groundwater Sample Collection:

- E.1 Sec 1.8.2.2: The TCEQ “standard operating procedure” for groundwater sampling and filtration is varied and revised. Additionally, it is not included in Attachment A-1. Please provide *detailed specifications for the intended filtration* for the various COPC types (e.g., Table 2, Subject Report).

Sec F Boring/Monitoring Well Design:

- F.1 Sec 2.2: The TCEQ acknowledges all monitoring well installations shall be temporary. Please confirm. Are the temporary monitoring wells intended for one sampling round only?
- F.2 Sec 2.2: In anticipation of appropriate exposure modeling, soil samples retrieved during boring advancement operations should be analyzed for *fraction of organic carbon (foc)* using the Walkley-Black method (e.g., Nelson and Sommers, 1996; USGS, 1986; etc.) with consideration of the U.S. EPA carbon fractions (Barcelona, et al., 1997) and using a suitable Van Bemmelen conversion factor (typically 1.724).
- F.3 Sec 2.3.2.1: Reference to “Figure 3” and “Figure 9” should be revised for agreement with figures.

- F.4 Regarding double cased monitoring wells: Discrepancies arise between text in Section 2.3, Figure 10 and Attachment A-1 regarding 1) the length and diameter of the outer casing and 2) the installation method for outer casing. Please provide detailed and congruent specifications regarding the design and installation of the outer casing.
- F.5 Sec 2.3.3.1: Reference is made to soil sample collection for grain size analysis. Attachment A-1 includes the ASTM Standard Practice D 2488, which specifies a method for soil grain size analysis by visual inspection. Will there not be a laboratory analysis for soil grain size (per ASTM D 2487)?
- F.6 Sec 2.3.3.2: The use of monitoring well inserts with pre-packed sand filters is implied. Please confirm and provide specifications (esp., diameter). Please provide specifications for overlying sand pack and rest of uphole well completion (esp., dimensions).
- F.7 Sec 2.3.5.2: See Item E.1.

Sec G References:

- Barcelona M.J., Caughey M.E., Krishnamurthy R.V., Shaw D.W., and Maas K. 1997 *Characterization of Organic Matter in Soil and Aquifer Solids*, USEPA Research and Development, EPA/600/S-97/001, 11 pp.
- Nelson D.W. and Sommers L.E. 1996 *Total Carbon, Organic Carbon, and Organic Matter*, in *Methods of Soil Analysis; Part 3 - Chemical Analysis*, Soil Science Society of America and American Society of Agronomy, pg 961 -1010.
- USGS 1986 Organic carbon (Walkley-Black Method) in *Field and Laboratory Procedures Used in a Soil Chronosequence Study*, USGS Geological Survey Bulletin 1648, 49 pp.